



# Implementing Disaster Medicine Training in a Medical School Curriculum

From demonstration project  
to curricular integration



**UVAMRC**  
**University of Virginia**  
**School of Medicine**  
**Charlottesville, VA**

# Participants

- **Matt Alexander, BS**  
Chief of Operations
- **Joseph Baltz, BSE**  
Director of Administration
- **Josh Durham, BS** *(MD in 3 weeks)*  
Deputy Chief of Operations
- **Edward Kantor, MD**  
Faculty Director/Chief



# UVAMRC-Background

- One of handful of MRCs run out of a university
- Only MRC with a student leadership model
- Based in the School of Medicine
- Partnered with the
  - School of Nursing, Local Health Department, Emergency Medicine, Toxicology, Red Cross, Regional EOC, University Hospital, Community Mental Health Center



# Presentation Goals

- Describe the three year experience with core disaster skills training in medical education
- Discuss the initial program and the move toward curricular integration
- Examine program evaluation and plans for improvement
- Review benefits of collaboration and interdisciplinary core competencies



# Goals of Curricular Integration

- Teach disaster response skills to students
- Introduce students to the roles and players involved in disaster response, including roles for medical students
- Generate interest in public health and disaster planning & response as possible careers
- Train next generation of physicians in basic disaster medical practice
- Increase recruitment of students in the UVAMRC



# Initial Disaster Response Curriculum

- Organized by UVA Health System Emergency Planning Director
- Lecture format only
- One day format
- Varying topics in emergency prep



# Disaster Response Curriculum-- 2004

- Designed by Dr. Mark Kirk
- Single day of training
- Overview lecture of disaster response and introductory case
- Small group breakout sessions
- Wrap up session with Q&A panel
- Held very late in 3rd year of training
- Was optional (only 60 medical students in attendance)



# Modules for Disaster Medicine

- Overview of Disaster and Bioterrorism
- Risk Communications and Mental Wellness
- Personal Protective Equipment (PPE)
- START Triage
- Extrication and Patient Transportation
- Recognizing Toxic Syndromes
- Mass Decontamination
- Mass Immunization and Infectious Disease



# Risk Communication Skills

- **Objective:** Provide students with concepts and practical experience with message management and crisis communication in disasters and public health emergencies
- **Goals for basic student competence:**
  - Understand individual role in using risk communication skills in a public health emergency
  - Know the steps in preparing and delivering a message and consequences of your message



# Personal Protective Equipment (PPE)

- **Objective:** Hands-on experience to gain entry-level confidence in operating in PPE ensembles in various settings
- **Goals for student competence:**
  - Develop confidence in their level of protection and know what protection they may need
  - Understand the makeup of their PPE and emergency procedures for failure
  - Understand proper donning and doffing of PPE/Respiratory Protection



# START Triage

- **Objective:** Learn principles of patient sorting and individual skills (for their level of training) that each student can apply to a community disaster response
- **Goals for student competence:**
  - Understand the concept and basic structure of the START triage system (meaning of colors, etc.)
  - Understand Jump START triage for pediatric patients
  - Demonstrate proficiency in skills that may be useful in a public health emergency



# Extrication and Patient Transportation

- **Objective:** Learn safe and effective ways to remove patients from dangerous environments and transport to safety
- **Goals for student competence:**
  - Understand individual role in assisting with removal and transport of injured patients
  - Know proper method of applying a backboard, C-collar and splints
  - Learn how to safely lift and carry a stretcher



# Recognizing Toxic Syndromes

- **Objective:** To recognize chemical toxic syndromes and take appropriate actions
  - Brief presentation on toxic syndrome recognition followed by interactive scenarios to test knowledge gained from lecture and from current level of training
- **Goals for student competence:**
  - Know the common chemical toxic syndromes, characteristics and examples
  - Know immediate actions to take after recognizing each syndrome



# Mass Decontamination

- **Objective:** To introduce students to the theory and practice of large scale decontamination
  - Brief presentation on how decon is run and exercises in decontamination of a mannequin given different scenarios
- **Goals for student competence:**
  - Understand both individual roles in decon
  - Understand how theory and strategy of mass decontamination



# Mass Immunization and Infectious Disease Issues

- **Objective:** Participants will learn how to distribute medications and administer injections to large numbers of people
- **Goals for student competence:**
  - Demonstrate ability to give an immunization (including Small Pox)
  - Demonstrate methods of self protection using airborne, contact, droplet and standard precautions
  - Understand the general principles of mass prophylaxis and mass immunization



# Feedback from Medical Students

- "Excellent...
- "... this is information we are unlikely to get anywhere else as students."
- "Great hands on experience."
- "...Make it possible to see all [sessions] instead of 3 of the 6."

Quantitative Post-experience Survey  
Data (2005)

Overall value to you (each  
module)–

- 1=Poor
- 5=Excellent
- Overall Rating: 4.28 (range 3.68 – 4.73)



# Disaster Response Curriculum-- 2005

- Sessions refined with more focus placed on Extrication, Triage, and Mass Immunization
- UVAMRC Leadership assisted in running modules
- Was still held late in 3rd year of training
- Students were only allowed to attend 4 of 6 small group modules
- Q&A session panel included physicians involved in real disaster response (OK City Bombing)
- Again was optional, but 100 students were in attendance



# Disaster Response Curriculum-- 2006

- Small group modules arranged so that students may attend 5 of 7
- UVAMRC membership assisted in modules
- All students attended Triage, Extrication, and Mass Immunizations Modules
- Q&A session panel included physicians involved in real disaster response (Hurricane Katrina)
- Held earlier in 3rd year of training
- Now mandatory (150 students in attendance)



# Disaster Response Curriculum-- 2006 cont'd.

- Personal Protective Equipment Module changed to Personal Protection Actions
- Focus includes initial PPE content with addition of methods of self protection using airborne, contact, droplet, and standard precautions
- Additional content taken from Mass Immunization Module for better use of time.



# Benefits of Curricular Integration for UVAMRC

- Provides medical students with practical skills to help in disaster response
- Increases pool of trained volunteers for community response (now and after graduation)
- Provides training opportunities that translate to the rest of the MRC
- Pre-training allows for easier integration and less need for 'just-in-time training'



# Clinical Connections as UVAMRC Member Training

- Clinical Connections modules provided to UVAMRC members March 2006
  - Introduction to Disaster and Risk Communication (entire group)
  - 4 small group modules
    - Recognizing Toxic Syndromes
    - Extrication/Transport
    - Personal Protective Equipment (PPE)
    - START Triage
  - 20 members participated
  - Very Positive feedback



# Expansion of Curricular Integration

- Initiate disaster training earlier - 1st and 2nd year
- Design level-specific training sessions for each medical student year (1-4) with expanded focus as students progress
- Measure acquisition of competency with appropriate assessment and evaluation
- Work to adapt competencies and curricula to nursing, GME and CME needs
- Align training with evolving national standards  
and provide certificate of completion



# Core Competencies in Medical Education

- Patient Care
- Professionalism
- Medical Knowledge
- Systems-Based Practice
- Interpersonal & Communication Skills
- Practice-Based Learning & Improvement

*To achieve competency, students must acquire a minimum level of skill, knowledge, and attitude.*



# Partnerships: Academic Medicine and Public Health

- The climate is right for working together as the Disaster Response infrastructure is transforming at the same time Medical Education is changing.
- HHS through the CDC has initiated cooperative agreements with Academia for partnerships through a number of member groups (AAMC, ATPM and ASPH).
- This is encouraging, as currently there is little incentive for cooperation, even between agencies from within the response community itself.



# Concept of Interdisciplinary Competencies

- The conventional response system is expected to need many extra health care personnel.
- Systems-based practice is a requirement in all medical training areas.
- Planning, working and training in advance will improve outcomes in events.
- Teaching the same material and using the same standards in each phase of medical training AND in the response community, increases efficiency and reduces cost.



# Discussion

- What minimum knowledge, skills and attitudes do YOU feel are necessary for medical and health professions students?
- What successes have YOU had working with your local medical school/health system?
- Do you feel this is an effective way to train volunteers and professionals?
- Other Questions, Comments, Ideas?



More info:

**UVAMRC**

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